REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and the remarks presented below. Please cancel Claims 1-10, and 22-26 without prejudice, and add new Claims 34-48.

Applicants appreciated the patent examiner's telephonic interview with inventor Andrew Filo 23 April 2008 as summarized in the Interview Summary from which agreement was reached if the limitation, "non-compressed" video, is added, Tsujii et al. (US 7,027,717 B1) would be distinguished. Applicants respectfully submit that the other prior art of record is also distinguished including Mizoguchi et al. (US 6,374,040 B2), Bhadkamkar et al. (5,893,062) and Weaver et al. (6,112,226) as applied.

Pursuant to the instant RCE, as requested by the patent examiner during the telephone interview, please enter the following Amendments and Remarks in the above-referenced application to advance the prosecution of the instant application.

Applicants' invention relates to formatting and storing audio and video information in a CD-DA format and reproducing the information on a compact portable device having interfaces for audio and video. In this embodiment the audio and video information is formatted for right and left stereo tracks of the CD-DA with the bit map video information being stored on one audio channel, with both PCM/CD modulated audio signals being stored on the respective stereo channels of the CD. The two channels are interleaved and recorded to the CD-DA in a manner similar to CD-DAs that have only audio information recorded thereon. In the preferred embodiment, a CD-DA disc of generally smaller diameter is utilized with the portable reproducing device such that a device of smaller size is realized. The portable reproducing device includes a housing with a display, one or more outputs for communicating audio information to an external device, such as a speaker, a pivoting cover providing access to a loaded CD-DA, and means control the operation of the portable reproducing device. In operation, the portable

reproducing device is operable to read the time-synchronized interleaved audio and video information recorded on the CD-DA, and process a signal representative thereof in an information processor. The processor extracts the audio and video information from the interleaved stereo audio channels and provides an audio signal and video signal to respective audio and video interfaces for reproduction by a speaker and a display. The user may operate the portable device by pivoting open the media cover portion, inserting a CD-DA formatted as described above, closing the media cover portion, and initiating one or more of the control means on the device. The invention may be implemented with less costly components and electronics, and provides an alternative to CD-I or CD-I/CD-DA formatted discs and reproducing devices where sector-interleaving is employed along with sub-headers for multiple data types.

As distinguished in Applicants' Specification Description of the Related Art, at paragraphs [0008] through [0010] and elsewhere throughout Applicants' Specification while in other systems,e.g., CD-I may be used as a medium for recording video, text, program, and audio information. Such systems require a reproducing device that operates interactively with the user for playing back the stored information. Moreover such systems are often uneconomical for use as entertainment devices for children due to excessive hardware costs for accessing and processing the interactive program data and compressed video information on the CD-I. In addition, CD-I discs will not play in a CD-DA player. Applicants' approach, on the other hand, acquiring the non-compressed video information from a first channel of the compact disc, the non-compressed video information having a video frame rate, with video frames formatted at frame start and frame end portions using its audio stream formatted at the disc level eliminates the need for decompression, buffering, conditioning phase shifting and synchronization. Moreover Applicants' non-compressed bit map video information provides a further described embodiment of its non-compressed video information.

Applicants' Specification, U.S. Pat. Appl. No. 2004/0076407 A1, Filo et al. published April 22, 2004, Description of the Related Art particularly distinguishes prior art approaches concerning compression, e.g., as follows:

[0006] Types of CDs exist for recording and reproducing applications including those where one or more types of data are recorded for reproduction. Some commercially available CD types include a compact disc digital audio ("CD-DA"), a compact disc read only memory ("CD-ROM"), compact disc interactive ("CD-I"), and a video CD or a digital versatile disk ("DVD"). The CD-DA is known for use as a storage medium for audio that is converted into digital code by sampling the sound waves at 44.1 kHz and converting each sample into a 16-bit number. In addition, a blank or recordable compact disk may be referred to as a "CD-R." In some applications a CD-ROM format is used to store text, graphics, and audio information. The CD-ROM storage format is different from that of a CD-DA and a CD-DA player cannot play CD-ROMs. In applications where full-motion is recorded, a video CD format may be used for recording VHS-quality video and CD-quality audio. Video CD movies are compressed using the MPEG- 1 method and require a motion picture experts group ("MPEG") decoder for playback. The CD-I format is used to store data, audio, still video, or animated graphics. CD-Is include an operating system standard and methods for compressing the data such that video images may be displayed. A CD-I requires a CD-I player for reproduction of stored information and cannot be played on, for example, a CD-DA player.

[0007] With the above-noted compact disc technology in existence, systems have been developed for recording and reproducing audio and video information. One video signal recording system described in U.S. Pat. No. 4,227,213 to Isobe for a "Video Signal Recording System" issued on Oct. 7, 1980, relates to recording a stationary image signal and an audio signal on a common video disc. In this system, video frames representing stationary images are recorded such that frame, or image, starting points are located on a common radial line of the video disc. The audio signal associated with the stationary image is time compressed and recorded in equal sized portions at predetermined intervals, ...

[0008] In other systems, a CD-I may be used as a medium for recording video, text, program, and audio information. These systems typically include a reproducing device that operates interactively with the user for playing back the stored information. However, these systems are often uneconomical for use as entertainment devices for children due to excessive hardware costs for accessing and processing the interactive program data and compressed video information on the CD-I. In addition, CD-I discs will not play in a CD-DA player.

Applicants' *frame start and end portions* for recording VIDEO INFORMATION ON A FIRST CHANNEL with *a reduced sample-per-frame number* while recording AUDIO INFORMATION SEPARATELY ON A SECOND CHANNEL, with resulting video and audio information being *time-synchronized in reproduction* is Not Obvious in view of the cited art

Bhadkamkar et al. and Weaver at al. in combination with the other references discussed below, fail to teach recording as claimed by combining a number of video pixels per sample, formatting the frame start portion and the frame end portion for recording the video information on a first channel and the audio information on a second channel, and reproducing the video and audio information with the video and audio information time-synchronized thereby generating a reduced sample-per-frame number as described and claimed by Applicants. Bhadkamkar et al. concern means of scan conversion for playback as opposed to efficient recording as claimed. Applicants' invention as claimed is neither shown nor obvious to combine the number of video pixels per sample to reduce the size of the video and audio combined recordings. Applicants' Claim 11 particularly recites formatting the frame start portion and the frame end portion for recording the video information on a first channel and the audio information on a second channel, the video and audio information being recorded as a modulated signal, and thus acquiring and reproducing the video and audio information such that the first

and second channels are respective left and right audio channels associated with the compact disc, and the video and audio information are time-synchronized, which is not found in the prior art.

Further Weaver et al. fail to teach allocating a portion of available samples, determined from a comparison between the sampled audio throughput and the reduced sample-per-frame number, as a frame start portion and a frame end portion and formatting the frame start portion and the frame end portion. Weaver et al. relates to concurrently encoding and tagging digital information for allowing non-sequential access during playback. The Weaver et al. system takes a video stream and tags every frame with markers for archival purposes. Tokenized descriptions are stored in a data base. The user can select what video is desired by searching and requesting through the data base. The video(s) requested are packetized and sent to the user via any data communications means in any format requested. The Mizoguchi et al. (6,374,040 B2) Portable DVD player discloses a portable DVD player having a MPEG and sub picture decoder which allows the picture to be scaled to the best fit of the screen. Tsujii et al. (US 7,027,717 Bl) at Col. 1, lines 21-26; Fig. 9 shows compressed serialized data streams with the audio and video NOT multi tracks for the same file 6 of Fig. 1 (which relates to a Quick Time decoder). In Col. 7, lines 63-65 and Col. 14, lines 45-50 audio and video data is interleaved for decompression and error detection in Quick Time. Consider claim 11- Mizoguchi and Tsujii teach that compression with embedded information recorded at the disc level followed by intensive decompression and formatting at the player level is the method described in the cited art, which is evident by the use of described sub picture data required with the devices. The sub picture data is required to match the pixel and aspect of the portable device's screen. Applicants', on the other hand, achieve a further advantageous resulting benefit by way of Applicants' claimed architecture using its frame rate, pixel count, audio stream formatted at the disc level to eliminate the need for decompression, buffering, conditioning phase shifting and synchronization. The elimination of these steps at the player level is done at the video editing source. The materials processed to match the CD player's capabilities.

FORMATTING THE FRAME START AND END PORTIONS FOR RECORDING VIDEO AND AUDIO INFORMATION ON RESPECTIVE *LEFT AND RIGHT AUDIO CHANNELS* ASSOCIATED WITH THE *COMPACT DISC MODULATION FOR THE VIDEO AND AUDIO* INFORMATION CLAIMED IN ACQUIRING AND REPRODUCING TIME-SYNCHRONIZED VIDEO AND AUDIO IS NOT OBVIOUS IN VIEW OF THE CITED ART

In reference to Figure 4 Mizoguchi and Tsujii, e.g., mpeg, quick time, and the like concern video an audio compressed and encoded into a single track or stream of sequential data. These streams are decoded and decompressed into a video channel and two audio channels. It is NOT possible to predict where a particular piece of datum will wind up during this cited prior art process. It is up to the decompression and processors in the player to reconstruct the video and audio images. This process requires a sizable memory to buffer the images so when they play and appear to be in real time. Otherwise the image would stop and stop in fits as the processor extracts and reconstructs the image. The worst case is rapidly changing images that require the entire screen to be refreshed with new images. The best case is still images, the decoders can simply tell the display processor to hold the image.

In contradistinction, Applicants' Claims particularly define formatting the frame start portion and the frame end portion for recording the video information on a first channel and the audio information on a second channel, the video and audio information being recorded as a modulated signal, and thus acquiring and reproducing the video and audio information such that the first and second channels are respective left and right audio channels associated with the compact disc, and the video and audio information are time-synchronized.

Independent Claims 18, 29, and 34 which recite the information processor processing time-synchronized modulated signal from the data acquisition sub-assembly for the audio signal and video signal derived with first and second channels (each correspond to one of left and right audio channels associated with the compact disc), with

the video signal having one or more frame markers to allow for video reproduction from the modulated signal as amended to define the video interface for acquiring video information from a first channel of the compact disc, the video information having a video frame rate, with video frames formatted at frame start and frame end portions. As described and claimed, the audio interface acquires audio information from a second channel of the compact disc, the video and audio information being recorded as a modulated signal, said audio information having a sampled audio throughput for a single frame of video combined as a number of video pixels per sample in a reduced sample-per-frame number. The claimed light emitting diode data acquisition sub-assembly is operable with the video interface and audio interface from the modulated signal information where the first and second channels each correspond to one of left and right audio channels associated with the compact disc for reading information from the compact disc. The information processor is coupled to the video interface, the audio interface, and the light emitting diode data acquisition sub-assembly reproducing the video and audio information from the modulated signal information from the left and right audio channels, the video and audio information being acquired according to the sampled audio throughput with the number of video pixels per sample according to the reduced sample-per-frame number.

If the Examiner would like to discuss Applicants' invention prior to issuing a further action, the Examiner should feel free to contact the undersigned attorney. In view of the foregoing, Applicants have placed the case in condition for reconsideration and respectfully requests allowance of the pending claims.

Respectfully submitted,

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